

**STATE OF WYOMING**  
**ARCHITECTURE AND CONSTRUCTION CLUSTER AND**  
**TECHNICAL DRAFTING PATHWAY COMPETENCIES**

**ARCHITECTURE AND CONSTRUCTION CLUSTER**

***Cluster Level Core Competencies & Objectives***

**COMPETENCY**

**AC1            The student will understand and apply Occupational Safety and Health Standards (OSHA)**

**OBJECTIVES**

- AC1-1    Demonstrate knowledge of and apply safety concepts related to the safe use of hand-tools, power/pneumatic tools, clothing and hair
  - Examples: carrying tools properly, use of safety guard, inspection of tools, changing blades and bits
- AC1-2    Demonstrate knowledge of and employ proper maintenance, set-up and inspection procedures for tools
  - Examples: lubrication, cords, hoses, connections, placing of switch, safety guards
- AC1-3    Demonstrate knowledge of the use and purpose of personal protective equipment (PPE)
  - Examples: respirators, safety glass, steel toed shoes, fall protection, hard-hats, hearing, etc.
- AC1-4    Demonstrate familiarity with emergency situations and procedures, including: use and location of first aid supplies, fire extinguishers, eye washers, understanding of blood pathogens, and evacuation procedures
- AC1-5    Follow safe procedures when handling materials
  - Examples: Proper lifting and carrying, material stacking and storage

**COMPETENCY**

**AC2            The student will be able to demonstrate knowledge of applied mathematics**

**OBJECTIVES**

- AC2-1    Perform basic arithmetic functions with real numbers
- AC2-2    Convert fractions/decimals
- AC2-3    Convert metric/inch measurement
- AC2-4    Perform basic trigonometric and geometric functions, solving for unknown angles and sides
- AC2-5    Demonstrate measurement skills
- AC2-6    Calculation: add, subtract, multiply and divide with fractions

**COMPETENCY**

**AC3            The student will demonstrate knowledge of the different career paths and opportunities within a pathway**

- Example: Layout and assemble a floor deck using dimensional lumber

**Example: Technical Drafting – Student demonstrates an awareness of possible careers related to Technical Drafting and an awareness of the academic preparation needed to qualify for those possible careers**

**Architecture and Construction Cluster**  
**TECHNICAL DRAFTING PATHWAY**

**Pathway Core Competencies & Objectives**

**COMPETENCY**

**ACTD1            The student will develop a technical drawing using orthographic projection**

**OBJECTIVES**

- ACTD1-1            Create an orthographic projection
- ACTD1-2            Identify the missing view of an object, given two of three orthographic projections
- ACTD1-3            Demonstrate knowledge of appropriate American National Standards Institute (ANSI)
  - Example 1: Use appropriate line types (center, hidden, phantom, object)
  - Example 2: Dimension using appropriate styles and standards (correct placement of measurement/dimensions)

**COMPETENCY**

**ACTD2            The student will develop technical drawings using standard sectional views.**

**OBJECTIVES**

- ACTD2-1            Create each of the standard sectional views
- ACTD2-2            Identify types of sectional views (full, half, offset, broken-out, removed and revolved)
- ACTD2-3            Select the appropriate type of sectional view for a specific situation

**COMPETENCY**

**ACTD3            The student will be able to demonstrate the use of auxiliary views**

**OBJECTIVES**

- ACTD3-1            Create a primary auxiliary view according to specifications provided
- ACTD3-2            Identify the situations in which auxiliary view is necessary

**COMPETENCY**

**ACTD4            The student will be able to demonstrate knowledge of and create pictorial drawings (isometric, oblique, and perspective)**

**OBJECTIVES**

- ACTD4-1            Identify three types of pictorial drawings
- ACTD4-2            Create an isometric view of a given shape, given an orthographic projection
- ACTD4-3            Pick the appropriate isometric image, given the orthographic projections

**COMPETENCY**

**ACTD5      The student will operate printers, plotters and scanners (including 3-D printers where applicable)**

**OBJECTIVES**

ACTD5-1      Scale and print a drawing on an appropriate size paper

**COMPETENCY**

**ACTD6      The student will demonstrate knowledge of and create working drawings (body of evidence activity/capstone activity)**

**OBJECTIVES**

ACTD6-1      Draw all necessary views of each part

ACTD6-2      Apply necessary notes, material specifications, symbols, and other data

ACTD6-3      Complete a parts list of the parts, which include parts number, mfg name, mfg stock number, material specs, quantity of each part, and notes for assembly

ACTD6-4      Complete an assembly drawing showing the relationship of the parts to each other

***The following are competencies that are NOT OFFERED STATEWIDE. Accordingly, these core competencies apply only to those programs that cover these topics.***

**COMPETENCY**

**ACTD7      The student will demonstrate the use of intersections, parallel and radial line developments**

**COMPETENCY**

**ACTD8      The student will demonstrate the use of fasteners**

**OBJECTIVES**

ACTD8-1      Identify various types of fasteners

ACTD8-2      Define thread terminology

ACTD8-3      Develop different thread forms

ACTD8-4      Calculate thread pitch

ACTD8-5      Draw simplified and schematic views of threads (internal and external)

ACTD8-6      Correctly draw, locate and label various fasteners on production, assembly drawings and parts lists

**COMPETENCY**

**ACTD9      The student will demonstrate the basics of Geometric Dimensioning and Tolerancing (GD&T)**

**OBJECTIVES**

- ACTD9-1      Create limit dimensions
- ACTD9-2      Understand basic tolerance terminology

**COMPETENCY**

**ACTD10      The student will demonstrate knowledge of and identify basic welding symbols**

**OBJECTIVES**

- ACTD10-1      Identify and demonstrate knowledge of the basic weld symbols
- ACTD10-2      Demonstrate knowledge of and specify weld types on drawings